

REMARKS

Careful consideration has been given to the Official Action of December 4, 2002 and reconsideration of the application as amended is respectfully requested.

The specification has been amended to comply with 37 CFR 1.77 by providing section headings and deletion of redundant material. As now presented the specification is believed to be free from formal objection.

In view of the action taken in the claims (to be noted hereafter), there is no need to amend the first paragraph of the specification since only one independent claims is presented.

An Abstract of the Disclosure has been submitted in compliance with 37 CFR 1.72(b).

In order to avoid the objections raised by the Examiner against the claims under 35 U.S.C. § 101, 35 U.S.C. § 112 and 35 U.S.C. § 103 all pending claims in the application have been cancelled without prejudice and replaced by claims 20-41. These claims are believed to be formally correct and allowable over the art cited. All claims are either generic or directed to the elected species.

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figures
1, 2, 3, 4A, B,
4C, D, 5, 6, 8,
7A-C and 10
J. Oropeza
6/18/03

In order to overcome the objections raised by the Examiner with respect to the drawings, there are attached herewith figures of the drawing marked in red to label the various boxes therein.

The claims are directed to an apparatus for treating tumors which apparatus comprises a plurality of electrodes adapted for placement in a region of a tumor of a patient to be treated; voltage pulses are supplied to the electrodes by a high voltage generator, and an impedance measuring unit measures impedance through tissue between the electrodes. A control and converter unit constructed as a computer controls the voltage applied to the electrodes by the high voltage generator based on receiving, before each voltage pulse or chain of voltage pulses, the impedance as determined by the impedance measuring unit in order to maintain a constant output voltage from the high voltage unit even though the impedance measured between the electrodes varies, thereby producing non-destructive perforation of cell membranes in the tissue allowing treatment of the tumors e.g. by radiation or chemotherapy.

The Examiner has rejected independent claims 1 and 19 on the combination of Mori and Hofmann.

It is respectfully submitted that the rejection of the claims based on this combination is not justified under 35 U.S.C. § 103 for the following reasons:

Mori, et al. describes a device for iontophoresis, which is a method to force an ionic current in the extra cellular space between the cells. They apply a low voltage so that the cells in the skin are not affected.

Hofmann, et al. describes a method for electroporation that perforate the cell membranes by applying high voltage pulses. The aim of the method is to affect the cells in the tissue.

The invention seeks to use impedance measurement to measure and control the extent of cell perforation in a way which does not affect the cell in the tissue, i.e. the cells are intact after electroporation. This is achieved by applying an electric field of varying amplitude, frequency and form of modulation.

This is extremely important in case of in vivo electroporation, where the cells should be intact after electroporation. It is also important to be able to know when the electroporation is complete.

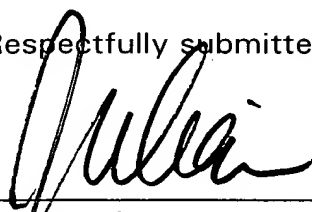
The invention permits both control so that the cells won't be destroyed during electroporation as well as that the electroporation is complete.

It is therefore respectfully submitted that the rejection of the claims on the cited combination is not applicable to claim 20 as now presented and the


dependent claims therefrom which recite additional features of the claimed combination.

Favorable reconsideration of the application is therefore earnestly solicited.

Respectfully submitted,



JULIAN H. COHEN
C/O LADAS & PARRY
26 WEST 61ST STREET
NEW YORK, N.Y. 10023
REG. NO. 20302 - 212-708-1887


Reg No
130086